

**Multi-Jurisdictional
Hazard Mitigation Plan:
Vista Irrigation District Annex
San Diego County, California
2023**

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1. SECTION ONE: Planning Area and Resources

1.1. Planning Area: Vista Irrigation District

Vista Irrigation District (District) is a Special District formed under the Irrigation District Act of the State of California to provide potable water service to its customers. It is governed by a five member Board of Directors elected by voters to four-year terms.

The District covers an area of approximately 21,200 acres. The service area includes the City of Vista and portions of the cities of Escondido, Oceanside, and San Marcos, and unincorporated areas of San Diego County. The District also owns the 43,402-acre (68 square mile) property housing Lake Henshaw reservoir in Santa Ysabel, roughly 25 miles from the District's central service area.

1.1.1. History

The District was formed in 1923 by local residents pursuant to Section 20500, et. seq., of the California Water Code. In 1946, Vista Irrigation District purchased the San Diego County Water Company, which included the 43,000-acre Warner Ranch that includes Henshaw Dam and Lake Henshaw.

The District, through the Bueno Colorado Municipal Water District, joined the San Diego County Water Authority (Water Authority) and Metropolitan Water District of Southern California (Metropolitan) in 1954 to acquire the right to purchase and distribute imported water throughout its service area. In 1993, the Bueno Colorado Municipal Water District was dissolved and reorganized into Vista Irrigation District and the District then became a member agency of the Water Authority.

The District currently serves roughly 29,000 accounts, the majority of which are residential, and a population of roughly 133,000.

1.1.2. District Infrastructure and Characteristics

The District has both local and purchased water supplies. The District purchases water supply from the Water Authority, which contains a blend of desalinated water from the Claude "Bud" Lewis Carlsbad Desalination Plant and imported water from northern California and the Colorado River, via Metropolitan. The District's local water supply, which is derived from surface water runoff in the San Luis Rey River Watershed and pumped groundwater from the Warner Wellfield, comes from Lake Henshaw. Local water is treated at the Escondido-Vista Water Treatment Plant, which the District jointly owns with the City of Escondido, and then conveyed via the Vista Flume to the Twin Oaks Valley area and the District's Pechstein Reservoir for distribution.

SECTION ONE | Planning Area and Resources

The District's infrastructure is broken down as follows:

District Distribution and Transmission Facilities

428 miles of pipelines

12 reservoirs (water tanks)

7 pumping stations

Vista Flume (11.25 miles of conduit)

Escondido-Vista Water Treatment Plant (jointly owned with the City of Escondido)

Lake Henshaw Reservoir

51,832 acre feet capacity

2,256 acres in area, 203 square mile watershed

Earthen Dam

12 active production wells and 91,000 feet of conduit

Day use recreation (fishing, boating)

1.1.3. Population, Demographics and Climate

The service area population is approximately 133,000. The median age of the District's population is 34 years. The majority of the population is Hispanic (49%). Whites make up 38%, Asians 5% and African Americans 2%. The remaining 1% of the population are American Indian, Pacific Islander and other races.

1.1.4. Economic Activity

The City of Vista, which constitutes the majority of the District's service area, has experienced considerable growth over the past 20 years, with the addition of over 20,000 new residents and construction of new industrial and commercial development. Although the City is approaching buildout, the population is expected to increase by more than 14,000 residents by 2030. The majority of this growth is anticipated to be accommodated by infill of vacant sites and redevelopment of underutilized sites. There are approximately 1,570 retail outlets in the service area.

1.1.5. Geography & Climate

The geography of the District's service area varies. The western edge of the service area is approximately 5 miles inland from the Pacific Ocean. It extends east another 10 miles to the foothills of the San Marcos Mountains. Elevations range from 300 feet above sea level toward the west and up to 1,000 feet above sea level to the east. Most of the businesses are located in the flatter areas in the center of the service area, and residences populate the surrounding hillsides.

The climate in the District's service area is typical of northern San Diego County - mild, varying from the mean annual maximum temperature of 74 to the mean minimum of 52 degrees Fahrenheit. The average annual rainfall for Vista is approximately 13 inches and occurs primarily from October through April. At Lake Henshaw, the mean annual maximum temperature is 77 and the mean minimum is 40 degrees Fahrenheit. The average annual rainfall is about 25 inches.

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1.1.6. Environmental Factors

Undeveloped areas contain natural vegetation consisting of chaparral brushland, oak-sycamore woodland, riparian-woodland, and oak-grass savanna.

1.2. Community Rating System Requirements

As a Special District, the District is **not eligible** for National Flood Insurance Program (NFIP) coverage nor can it participate in the Community Rating System (CRS), a Federal Emergency Management Agency (FEMA) program that rewards communities that go beyond the minimum standards for floodplain management under the NFIP.

For information related to the Community Rating System participation of the cities that fall within the District service area, including the City of Vista, Escondido, Oceanside and San Marcos, see the *San Diego County Multi-Jurisdictional Hazard Mitigation Plan*.

For more information on the NFIP, see <http://www.fema.gov/national-flood-insurance-program>.

TABLE 1: FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 1.1
CRS REQUIREMENTS MET BY THE SAN DIEGO COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN.

Community Rating System (CRS) Planning Steps	Local Mitigation Planning Handbook Tasks (44 CFR Part 201)
Step 1. Organize	Task 1: Determine the Planning Area and Resources Task 2: Build the Planning Team 44 CFR 201.6(c)(1)
Step 2. Involve the public	Task 3: Create an Outreach Strategy 44 CFR 201.6(b)(1)
Step 3. Coordinate	Task 4: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Step 4. Assess the hazard	Task 5: Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
Step 5. Assess the problem	
Step 6. Set goals	Task 6: Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i) 44 CFR 201.6(c)(3)(ii) 44 CFR 201.6(c)(3)(iii)
Step 7. Review possible activities	
Step 8. Draft an action plan	
Step 9. Adopt the plan	Task 8: Review and Adopt the Plan 44 CFR 201.6(c)(5)
Step 10. Implement, evaluate, revise	Task 7: Keep the Plan Current
	Task 9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

SECTION ONE | Planning Area and Resources

Any jurisdiction or special district may participate in the hazard mitigation planning process. However, to request FEMA approval, each of the local jurisdictions must meet all requirements of 44 CFR §201.6. In addition to the requirement for participation in the process, the Federal regulation specifies the following requirements for multi-jurisdictional plans:

- The risk assessment must assess each jurisdiction's risk where they may vary from the risks facing the entire planning area. (44 CFR §201.6(c)(2)(iii))
- There must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. (44 CFR §201.6(c)(3)(iv))
- Each jurisdiction requesting approval of the plan must document that it has been formally adopted. (44 CFR §201.6(c)(5))

The hazard mitigation plan must clearly list the jurisdictions that participated in the plan and are seeking plan approval. The San Diego County Multi-Jurisdictional Hazard Mitigation Plan and annexes meet all requirements.

Once adopted, this plan will be incorporated into the District's future planning documents. The previous 2018 Multi-Jurisdictional Plan was incorporated into the District's 2020 Urban Water Management Plan.

2. SECTION TWO: Planning Team and Process

2.1. Planning Team

District staff involved in the hazard mitigation planning process, including working with the County of San Diego and local planning partners to develop District goals are identified below.

Randy Whitmann, Director of Engineering

Frank Wolinski, Director of Operations and Field Services

Marlene Kelleher, Director of Administrative Services

Don Smith, Director of Water Resources

Alisa Nichols, Management Analyst

Brian Fisher, IT Supervisor

Sherry Thorpe, Safety and Risk Manager

Don Gordon, Facilities Supervisor

2.2. Planning Process

The goals and objectives were developed by considering the risk assessment findings and reviewing the District's 2017 Potable Water Master Plan, 2020 Water Supply Planning Study, 2020 Urban Water Management Plan, other localized hazard identification and loss/exposure estimates, and an analysis of the District's current capabilities assessment. These preliminary goals, objectives and actions were developed to represent a vision of long-term hazard reduction or enhancement of capabilities.

2.2.1. Planning Meetings

The District Planning Team met on the following dates to discuss core functions, internal deliverables and preparation of the draft the District's Multi-Jurisdictional Hazard Mitigation Plan Annex.

December 29, 2021 | March 21, 2022 | April 7, 2022 | April 19, 2022

District staff also met with the County of San Diego and other plan stakeholders on the following dates to discuss and review plan aspects, FEMA worksheets and deliverables.

December 2, 2021 | May 12, 2022 | November 9, 2022 | November 10, 2022 | November 14, 2022.

3. SECTION THREE: Outreach Strategy

The District has communication protocols and procedures to inform customers, the public and other government entities of any current or predicted water shortages and associated response actions. The District uses a range of printed and electronic materials and other outreach activities to raise awareness of conservation measures available to customers. The District provides water efficiency messaging in newsletters (printed and electronic), water bill messages, on-hold recordings, announcements on the District's website homepage and articles and news releases in local publications to keep the public, constituents and elected officials up-to-date on District activities.

Additionally, as a member of the San Diego County Water Authority (Water Authority), the District communications and water conservation staff attend the Joint Public Information and Conservation Coordinators monthly meeting hosted by the Water Authority for all member agencies. District staff also participates in the Water Authority's Water Agency Emergency Collaborative (WAEC) where regional and local emergency management and communications are discussed. Coordinated regional messaging on water efficiency topics, drought declarations, demand management measures and emergency management are a long-running practice between the Water Authority and member agencies.

Communication during a supply shortage incident or regional disaster is critical to relay information to employees, response partners and critical customers. During a catastrophic event that interrupts potable water service to District customers, the District will follow communication procedures outlined in the District's Emergency Response Plan and coordinate with the Water Authority and County OES if necessary. See Section 4.1.4 of this Annex for more information on District outreach and education capabilities.

See the *San Diego County Multi-Jurisdictional Hazard Mitigation Plan's* Section Three for details about the countywide outreach strategy.

4. SECTION FOUR: District Capabilities

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities, and must be included in a hazard mitigation plan by the planning team.

4.1. Capability Assessment

The planning team identified current District capabilities available for implementing hazard mitigation activities. The Capability Assessment (Assessment) portion of the mitigation plan identifies the four primary types of capabilities for reducing long-term vulnerability through mitigation planning.

- Planning and regulatory
- Administrative and technical
- Financial
- Education and outreach

The Assessment includes a summary of codes, ordinances, and plans already in place associated to hazard mitigation planning as well as departments and their responsibilities associated to implementation of hazard mitigation planning and activities. The legal and regulatory capabilities of the District are shown in Table 4.1.1, which presents the existing ordinances and codes that affect the physical or built environment of the District. Examples of legal and/or regulatory capabilities can include the County of San Diego building codes, state health and safety codes, zoning ordinances, subdivision ordinances, special purpose ordinances, site plan review, general plans, capital improvement plans, emergency response plans, and real estate disclosure plans.

The Assessment identifies administrative and technical capabilities including the identification of staff, personnel, and department resources available to implement the actions identified in the mitigation section of the Plan. The District administrative and technical capabilities are shown in Table 4.1.2.

The Assessment also identifies the District's fiscal capabilities that may be applicable to providing financial resources to implement identified mitigation action items. Financial capabilities are shown in Table 4.1.3. The District's education and outreach strategies to convey information to District customers are shown in Table 4.1.4.

4.1.1. Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Table 4.1.1 identifies existing planning documents and regulations related to mitigation efforts within the community. Specific resources reviewed include the District's 2017 Potable Water Master Plan, Capital Improvement Plan, 2020 Urban Water Management Plan, 2020 Water Supply Planning Study, Water Supply Response Program, Emergency Response Plan and Mutual Aid agreements.

SECTION FOUR | District Capabilities

**TABLE 4.1.1: VISTA IRRIGATION DISTRICT LEGAL AND REGULATORY CAPABILITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Regulatory Tools (Ordinances, Codes, and Plans)	Local Authority (Y/N)	Do plans identify hazards and projects to be used in mitigation actions?
Plans		
A. Comprehensive Master Plan	Yes	Potable Water Master Plan (2017). Yes.
B. Capital Improvement Plan	Yes	Mainline Replacement Program – formalized in 1995. Potable Water Master Plan (2017) and follow up studies/structural analyses for individual projects. Water Supply Planning Study/Plan (2020). Yes.
C. Economic Development Plan	N/A	Under the jurisdiction of the cities of Vista and San Marcos, Escondido and Oceanside.
D. Local Emergency Operations Plan	Yes	The District’s emergency response is coordinated through the following levels as defined in Title 19 guidelines of the California Code of Regulations: <ul style="list-style-type: none"> • Field response • Local government • Operational area • Regional • State Additionally the District has the following Emergency Response Plans and Mutual Aid Agreements in place: <ul style="list-style-type: none"> • Vista Irrigation District Emergency Response Plan (updated in 2020). • Lake Henshaw Emergency Action Plan. • Mutual Aid agreements with State, County of San Diego and San Diego County Water Authority and 23 of its member agencies.
E. Continuity of Operations Plan	Yes	Included in the District Emergency Response Plan as well as Mutual Aid agreements.
F. Transportation Plan	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
G. Stormwater Management Plan	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
H. Community Wildfire Protection Plan	N/A	Note: District does have Wildfire Annex in Emergency Response Plan.
I. Real Estate Disclosure Requirements	No	The District does not have jurisdiction to require real estate disclosures.
J. Other Special Plans (e.g., brownfields, redevelopment, etc.)	Yes	2020 Urban Water Management Plan (updated every 5 years).

SECTION FOUR | District Capabilities

**TABLE 4.1.1 (CONTINUED): VISTA IRRIGATION DISTRICT LEGAL AND REGULATORY CAPABILITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Regulatory Tools (Ordinances, Codes, and Plans)	Local Authority (Y/N)	Do plans identify hazards and projects to be used in mitigation actions?
Building Code, Permitting and Inspections		
K. Building Codes	N/A	Standard Drawings and Specifications (pertaining to water system infrastructure). No official date, revisions made to sections as needed.
L. Building Code Effectiveness Grading Schedule (BCEGS) Score	N/A	Under the jurisdiction of other agencies.
M. Fire Department ISO Rating	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside. The District provides available water system fire flow information to fire departments upon request.
N. Site plan review requirements	Yes	Review and approve all plans for water system improvements
Land Use Planning and Ordinances		
O. Zoning ordinance	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
P. Subdivision ordinance or regulations	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
Q. Special purpose ordinances (floodplain management, storm water management, hillside or steep slope ordinances, hazard setback requirements)	N/A	Under the jurisdiction of other agencies.
R. Growth management ordinances (also called "smart growth" or anti-sprawl programs)	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
S. Flood Insurance rate maps	N/A	Under the jurisdiction of other agencies.
T. Acquisition of land for open space and public recreation areas	No	The District has the ability to use eminent domain for water supply and water system infrastructure purposes only.

4.1.2. Administrative and Technical

Administrative and technical capabilities include staff and their skills and tools that can be used for mitigation planning and implementation of specific mitigation actions and are identified in Table 4.1.2. Specific resources reviewed include those involving technical personnel such as engineers with knowledge of land development and land management practices, engineers and facilities staff trained in construction practices related to building and infrastructure, water resources, distribution and facilities staff with an understanding of natural or manmade hazards, and administrative personnel with financial planning, emergency management, grant writing, water quality and geographic information system (GIS) skills.

SECTION FOUR | District Capabilities

**TABLE 4.1.2: VISTA IRRIGATION DISTRICT ADMINISTRATIVE AND TECHNICAL CAPACITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Administrative and Technical Resources	Y/N	Department/Agency and Position
A. Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	Fully staffed Engineering Department.
B. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Fully staffed Engineering Department.
C. Planners or Engineer(s) with an understanding of natural and/or manmade hazards	Yes	Fully staffed Engineering, Water Resources and GIS departments.
D. Mitigation Planning Committee	Yes	District staff coordinates mitigation planning across departments and with other local agencies within its service area.
E. Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	Facilities department responsible for ensuring all District facilities are cleared of brush, debris and maintained to industry standards.
F. Mutual Aid Agreements	Yes	<p>The District is located in the State of California Mutual Aid Region VI and San Diego County Office of Emergency Services is responsible for coordination and regional emergency management. The District is represented at the County OES through the San Diego County Water Authority.</p> <p>The District is a member of CalWARN Southern Region and a signatory to the California Water/Wastewater Agency Response Network WARN 2007 Omnibus Mutual Assistance Agreement.</p> <p>The Water Authority and 23 of its member agencies, including the District, have entered into a Mutual Aid Agreement.</p>

SECTION FOUR | District Capabilities

**TABLE 4.1.2 (CONTINUED): VISTA IRRIGATION DISTRICT ADMINISTRATIVE AND TECHNICAL CAPACITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Staff/Personnel Resources	Y/N	Department/Agency and Position
A. Chief Building Official	N/A	The District Engineering department sets requirements and approves water infrastructure.
B. Floodplain Manager	N/A	Under the jurisdiction of other agencies.
C. Emergency manager	Yes	The District operates under SEMS and NIMS, which are based on the Incident Command System and the Multi-Agency Coordination System. The District has full-time staff with safety and emergency management experience, trained in NIMS/SEMS and authorized to access/represent the District through San Diego County WebEOC.
D. Surveyors	N/A	The District Engineering and Water Resources departments review and approve work performed by surveying consultants.
E. Staff with education or expertise to assess the community's vulnerability to hazards	Yes	The District has full-time staff in various departments with the necessary education and experience to assess risks and hazards with respect to District operations and facilities throughout the District service area, as well as coordination with other agencies.
F. Community Planner	N/A	Under the jurisdiction of the cities of Vista, San Marcos, Escondido and Oceanside.
G. Scientists familiar with the hazards of the community	Yes	The District has an Environmental Laboratory Accreditation Program (ELAP) certified laboratory (Certificate No. 1761). The District's laboratory is accredited for Total coliform, E.coli, and heterotrophic bacteria.
H. Civil Engineer	Yes	Fully staffed Engineering and Water Resources departments.
I. Personnel skilled in GIS	Yes	Fully staffed GIS Department
J. Grant writers	Yes	Administration, Finance, Engineering, Operations.

SECTION FOUR | District Capabilities

4.1.3. Financial

Table 4.1.3 shows specific financial and budgetary tools available to the District such as; capital improvements project funding; authority to levy taxes for specific purposes; fees for water; impact fees for homebuyers or developers for new development; ability to incur debt through general obligations bonds; and the Water Rate Stabilization Fund.

**TABLE 4.1.3: VISTA IRRIGATION DISTRICT FISCAL CAPABILITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Financial Resources	Accessible or Eligible to Use (Yes/No)	Funding activities and potential to fund future mitigation actions
A. Community Development Block Grants	N/A	
B. Capital improvements project funding	Yes	New facilities and system improvements are funded by water rates. Water rates are increased over time based on the long-range capital improvement plan. Replacement facilities are financed by depreciation and interest on accumulated depreciation. Expanded facilities are funded by developer fees and capacity charges. Items in the long-range capital improvement plan are determined not only by the depreciation schedule, but through a process which assesses a combination of factors including age, condition and the critical nature of the facility. The long-range capital improvement plan spreads projects over several years to maintain a constant level of capital projects to maximize the efficiency of District resources. Funds collected or accumulated in years in which there are no new or expanded facilities are placed into the District's construction reserve account. Funds in the construction reserve account are used to pay for construction projects in years that the costs of construction projects exceed the amount collected from water rates.
C. Authority to levy taxes for specific purposes	Yes	<p>The District can levy assessments (i.e., to pay interest on bonds, etc.) pursuant to California Water Code Sections 25650 – 25725.</p> <p>Special Districts require approval by 2/3 of votes of qualified voters to impose, extend, or increase any special tax and any revenue from the special tax is limited to the purpose or service for which the tax was imposed.</p> <p>California Water Code §20500, et seq., authorizes the District to exercise the power of eminent domain; to fix, revise and collect rates or other charges for the delivery of water, use of facilities or property, or provision of service; and to fix in each fiscal year, a water standby or availability charge on land within the boundaries of the District to which water is made available by the District.</p>

SECTION FOUR | District Capabilities

**TABLE 4.1.3 (CONTINUED): VISTA IRRIGATION DISTRICT FISCAL CAPABILITY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Financial Resources	Accessible or Eligible to Use (Yes/No)	Funding activities and potential to fund future mitigation actions
D. Fees for water	Yes	As water rates and fees for Special Districts are regulated by Proposition 218, which amended the California Constitution by adding articles XIII C (“Article XIII C”) and XIII D (“Article XIII D”), there are limitations on the ability of special districts to levy and collect existing and future taxes, assessments, and property-related fees and charges.
E. Water Rate Stabilization Fund	Yes	In the event of a prolonged drought and mandatory water use reductions, funds from this reserve could be used to help offset a severe increase in the water rate as a result of decreased water sales. If necessary, the District could also use funds from its Capital Improvement Reserve to stabilize rates.
F. Impact fees for homebuyers or developers for new developments/homes	Yes	Capacity fees are charged for new water meters.
G. Incur debt through general obligation bonds	Yes	The District may issue bonds, borrow money and incur indebtedness. Taxes, assessments, fees, and charges may be pledged to repay bonds or other forms of indebtedness.
H. Incur debt through special tax and revenue bonds	Yes	The District may issue bonds, borrow money and incur indebtedness. Taxes, assessments, fees, and charges may be pledged to repay bonds or other forms of indebtedness.
I. Incur debt through private activity bonds	Yes	The District has the ability to incur debt through private activity bonds.
J. Withhold spending in hazard-prone areas	No	

4.1.4. Education and Outreach

The District has communication protocols and procedures to inform customers, the public, other government entities and the community of any current or predicted water shortages or regional disasters affecting water supply and associated response actions. The District uses a range of printed and electronic materials and other outreach activities to raise awareness of conservation measures available to customers.

As a member agency of the Water Authority, the District also collaborates in regional messaging related to water conservation and emergency management information. Coordinated regional messaging on water efficiency topics, drought declarations, demand management measures and emergency management are a long-running practice between the Water Authority and member agencies.

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**TABLE 4.1.4: VISTA IRRIGATION DISTRICT EDUCATION AND OUTREACH CAPABILITIES.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 4.1 DATA.**

Program/Organization	Y/N	Could the program/organization help implement future mitigation activities?
A. Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	The District can leverage local organizations and groups for messaging purposes.
B. Ongoing public education or information program (e.g., water efficiency and conservation, preparation for water supply emergencies, Water Supply Response Program and drought response)	Y	Information on responsible water use, conservation programs and emergency preparedness on agency website, links to County OES, and/or newsletters.
C. Water Quality and Water Conservation school programs	Y	The District has ongoing educational programs related to water efficiency and conservation.
D. Public-private partnership initiatives addressing water-related issues	N/A	
E. Joint Public Information and Conservation Coordinators (JPIC) monthly meeting.	Y	Information sharing to enhance regional and local water efficiency and drought response communications.
F. Water Agency Emergency Collaborative (WAEC) bi-annual meetings	Y	Information sharing to help develop regional and local emergency management response actions and communications.
How can these capabilities be expanded and improved to reduce risk?		

4.1.5. Ability to Expand/Enhance Resources

In order to expand/enhance internal capabilities to mitigate identified risk, the District may need to rely on outside resources and consultants in the areas of planning and policy, administrative and technical, financial and outreach and education.

As most mitigation efforts focus on infrastructure replacement, the District may need consultants in the areas of planning and policy, administrative, technical and financial to assist in qualifying for various funding sources. These funding sources may include:

Drinking Water State Revolving Fund | Infrastructure State Revolving Fund | Water Infrastructure and Innovation Act | Building Resilient Infrastructure and Communities | WaterSMART Water and Energy Efficiency Grants | Municipal Bonds.

Additionally, the financial and administrative consultant scope may include, but not be limited to:

- Establishing a bond rating for the District.

SECTION FOUR | District Capabilities

- Develop a funding portfolio and financial strategy.
- Modeling impacts to rates.
- Design a strategic rate schedule appropriate for funding mitigation efforts.
- Apply for low interest loans and grants.

Public outreach and education is in an integral component of any construction project that involves infrastructure replacement and including consultants in these areas will improve the progression and public view of mitigation projects. Outreach and education explains the rationale behind the project, ensures transparency and builds public support. Tools to facilitate outreach and education may include, but not be limited to:

- Press releases
- Newsletters/Flyers
- Social media
- Surveys
- Website postings
- Public Meetings

5. SECTION FIVE: Risk Assessment and Hazard Summary

The planning team conducted a risk assessment to determine the potential impacts of hazards to the people, economy, and built and natural environments of the District service area. The risk assessment provides the foundation for the rest of the mitigation planning process, which is focused on identifying and prioritizing actions to reduce risk to hazards.

In addition to informing the mitigation strategy, the risk assessment also can be used to supplement the District's emergency preparedness and response priorities, for land use and comprehensive planning, and for decision making by elected officials, city and county departments, businesses, and organizations in the community.

5.1. Hazards Summary

After conducting a risk assessment, the following hazards were identified by the planning team: **Earthquake, Wildfire, Power Loss, Drought and Man-Made – Cyberattack**. A brief rationale for including each of these hazards is below (associated figures are in Section 8 of this plan):

- **Earthquake**

An earthquake is caused by a sudden slip of a fault plane at the earth's surface. The slip releases energy outward from the fault in all directions in the form of seismic waves, which travel through the earth's crust and cause the shaking that is felt during an earthquake. The amount of energy released during an earthquake is expressed as magnitude and is recorded on seismographs. A common magnitude scale is the Richter Scale where the strength of an earthquake is expressed in whole numbers and decimals (e.g., 7.2). Earthquakes can cause structural damage, injury and loss of life, as well as damage vital infrastructure such as water, power, gas and communication systems.

Geographic extent of this hazard is District-wide. The Rose Canyon fault traverses through the heart of downtown San Diego northward up the coast. Geologists estimate that the Rose Canyon fault is capable of a magnitude 6.9 earthquake and is the biggest earthquake threat to the urban San Diego area. Additionally, the San Andreas Fault system can cause powerful earthquakes as big as magnitude 8.0, which would generate strong shaking levels in the San Diego region. Two other faults, the Elsinore and San Jacinto located in northeastern San Diego County, can also generate moderately sized but potentially damaging earthquakes. The Rose Canyon Fault lies offshore (approximately six miles from offshore portions of the Newport-Inglewood-Rose Canyon fault zone) and is capable of generating an earthquake that could damage above ground and below ground water storage and infrastructure.

SECTION FIVE | Risk Assessment and Hazard Summary

throughout the District. Since the District receives imported water from the Los Angeles area, earthquake activity along the San Andreas and Elsinore Faults would likely disrupt water delivery to the District.

Figure A-1 depicts the proximity of the District's service area from inactive and active fault lines and **Figure A-2** illustrates the shaking potential.

The District has an Earthquake Annex in its Emergency Response Plan.

Geographic Area: Extensive—75 to 100 percent of planning area or consistent single-point occurrences.

Maximum Probable Extent: Moderate—Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.

Probability of Future Events: Occasional—1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.

Overall Ranking: Medium—The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

- **Wildfire**

Wildfires spread by consuming flammable vegetation and can be caused by human activity and natural events such as lightning. Wildfires often occur in forested or other highly vegetated areas; wildfires can be classified as forest, urban, or interface. Wildfire behavior is based on three primary factors: fuel, topography, and weather; all three factors affect the burning qualities and speed that the fire burns as well as the severity and duration.

The majority of the District service area is located in Vista, which has been designated a Local Responsibility Area (LRA) by CAL FIRE. As seen in **Figure A-3**, portions of Vista are located in "Very High Fire Hazard Severity Zones" in LRA as recommended by CAL FIRE. Portions of the District service area, primarily in unincorporated areas, are located in State Responsibility Areas (SRA) that have been designated as Very High Hazard Severity Zone by CAL FIRE. A combined twenty two percent of the District service area is located in "Very High Hazard Severity Zones." Additionally, areas in Carlsbad, San Marcos and Escondido adjacent to the District are also located in Very High Hazard Severity Zones. Areas adjacent to the District service area have been impacted by large wildfire events in 2003, 2007 and 2014.

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The seasonal climatic conditions during Southern California's wildfire season that generally runs from May through November create potential threats regarding control and protection against fires in the District. The hot, dry weather typical of this area in summer and fall, coupled with Santa Ana winds and low humidity frequently results in wildfires that could threaten District facilities. Most non-urban District facilities would be susceptible to wildfire because they are situated near open space and areas containing highly flammable, native vegetation. As most of these facilities are below ground in vaults, the overall impact is diminished.

The District has a Wildfire Annex in its Emergency Response Plan.

Geographic Area: Extensive—75 to 100 percent of planning area or consistent single-point occurrences.

Maximum Probable Extent: Moderate—75 to 100 percent of planning area or consistent single-point occurrences.

Probability of Future Events: Likely—10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

Overall Ranking: Medium—The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

- **Power Loss**

Power loss scenarios can vary from a loss of an individual circuit to the entire power grid and can last from minutes to hours or even weeks to months. Power loss scenarios can stem from damage to San Diego Gas & Electric (SDG&E) above or below ground infrastructure such as power poles, transformers and electric lines to planned events such as Public Safety Power Shutoff's (PSPS) and rolling outages. Other power loss scenarios can be caused by other events such as wildfires, earthquakes and cyber/malevolent attacks.

The District's water distribution system is mostly gravity-based and during a small (single circuit) or large (full grid) power outage can initially sustain pressure and continued flow under normal or default conditions. The size, location and duration of the outage will determine the response necessary. Most outages can be responded to as an operational event.

The District has experienced full grid power outages, PSPS's and rolling outages in its service area. In 1996 and 2011, full grid power outages occurred as a result of transmission line failures in parts of the Western Interconnection.

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Both outages lasted less than 12 hours and required only operational changes to the District's distribution system.

PSPS's occur when extreme weather or fire threaten SDG&E's electrical system. SDG&E typically gives advanced notice before a PSPS event is to occur and notifies its customers when de-energization and restoration takes place. PSPS event duration is highly dependent on weather conditions and SDG&E's ability to inspect overhead lines before re-energizing. Based on the CPUC's Fire-Threat Map (**Figure A-4**) that identifies areas associated with increased risk for utility associated wildfires, only small portions of the Districts service area is located in Tier 2 (elevated) fire-threat area.

Rolling outages occur when extreme heat increases energy demands, and the demand becomes greater than the available energy supply. These outages are typically scheduled, last 1-2 hours, and require minimal to no operational changes by the District.

The District has a Power Loss Annex in its Emergency Response Plan.

Geographic Area: Extensive—75 to 100 percent of planning area or consistent single-point occurrences.

Maximum Probable Extent: Moderate—Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.

Probability of Future Events: Likely—10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

Overall Ranking: Medium—The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

- **Drought**

Drought is a period of abnormally dry weather sufficiently prolonged for the lack of water to cause a serious hydrologic imbalance in the affected area. Droughts can be defined in different subsets: meteorological, hydrological, agricultural and socioeconomic. Drought is a cyclic part of California climate and can occur in winter and summer.

Historically, roughly 70% of the District's water supply is dependent on imported water delivery from outside sources, which may be subject to state emergency drought declarations and mandatory cutbacks. Groundwater at

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Lake Henshaw is used to supplement the local water supply whenever surface runoff is insufficient to produce adequate supplies of local water. As the District has access to treated water supplies from the San Diego County Water Authority, including water from the Carlsbad Desalination Plant, its co-owned water treatment plant with the city of Escondido and ground/surface water sources at Lake Henshaw, it is more drought resilient than other water retailers in the region. Additionally, the District has a Water Supply Response Plan to administratively and operationally address drought conditions.

Currently, the San Diego County region is in a Moderate drought (D1) per the National Drought Mitigation Center – see **Figure A-5**.

Geographic Area: Significant—25 to 75 percent of planning area or frequent single-point occurrences.

Maximum Probable Extent: Moderate—Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.

Probability of Future Events: Likely—10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

Overall Ranking: Medium—The criteria fall mostly in the middle ranges of classifications and the event’s impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

- **Man-made – Cyberattacks**

A cyberattack is an assault launched by cybercriminals using one or more computers against single/multiple computers or a network. A cyberattack can maliciously disable computers, steal data or use a breached computer as a launch point for other attacks. Cybercriminals use a variety of methods to launch cyberattacks including, malware, phishing, ransomware, denial of service and other methods as well as physical attacks.

According to Check Point Research, in 2021, cyberattacks on corporate networks increased by 50% from 2020. Cyberattacks on utility companies increased 46% percent in the same period.

The District’s business network along with financial, billing, and email systems could be compromised from a cyberattack. An attack on the District’s Supervisory Control and Data Acquisition (SCADA) system can also disable remote monitoring or control of the water distribution system. The impacts of

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a cyberattack could disrupt business continuity and operations for weeks and even months.

To date, the District has not had a cyberattack or breach of any significance.

The District has a Cyber Security Annex in its Emergency Response Plan.

Geographic Area: Limited—10 to 25 percent of the planning area or limited single-point occurrences.

Maximum Probable Extent: Severe—Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of services for weeks or months.

Probability of Future Events: Occasional—1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.

Overall Ranking: Medium—The criteria fall mostly in the middle ranges of classifications and the event’s impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

SECTION FIVE | Risk Assessment and Hazard Summary

TABLE 5.1: VISTA IRRIGATION DISTRICT HAZARD SUMMARY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 5.1 DATA.

Hazard	Location (Geographic Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance Ranking
Avalanche	Negligible	Weak	Unlikely	Low
Dam Failure	Negligible	Weak	Unlikely	Low
Drought	Significant	Moderate	Likely	Medium
Earthquake	Extensive	Moderate	Occasional	Medium
Erosion	Limited	Weak	Occasional	Low
Expansive Soils	Negligible	Weak	Unlikely	Low
Extreme Cold	Negligible	Weak	Unlikely	Low
Extreme Heat	Significant	Weak	Occasional	Low
Flood	Limited	Weak	Unlikely	Low
Hail	Limited	Weak	Unlikely	Low
Hurricane	Negligible	Weak	Unlikely	Low
Landslide	Limited	Weak	Unlikely	Low
Lightning	Limited	Weak	Unlikely	Low

SECTION FIVE | Risk Assessment and Hazard Summary

*TABLE 5.1: VISTA IRRIGATION DISTRICT HAZARD SUMMARY.
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 5.1 DATA.*

Hazard	Location (Geographic Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance Ranking
Sea Level Rise	Negligible	Weak	Unlikely	Low
Severe Wind	Limited	Moderate	Occasional	Low
Severe Winter Weather	Limited	Weak	Unlikely	Low
Storm Surge	Negligible	Weak	Unlikely	Low
Subsidence	Negligible	Weak	Unlikely	Low
Tornado	Negligible	Weak	Unlikely	Low
Tsunami	Negligible	Weak	Unlikely	Low
Wildfire	Extensive	Moderate	Likely	Medium

Definitions for Classifications

Location (Geographic Area Affected)

- **Negligible:** Less than 10 percent of planning area or isolated single-point occurrences.
- **Limited:** 10 to 25 percent of the planning area or limited single-point occurrences.
- **Significant:** 25 to 75 percent of planning area or frequent single-point occurrences.
- **Extensive:** 75 to 100 percent of planning area or consistent single-point occurrences.

Maximum Probable Extent (Magnitude/Strength based on historic events or future probability)

- **Weak:** Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in little to no damage.
- **Moderate:** Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.
- **Severe:** Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of services for weeks or months.
- **Extreme:** Extreme classification on scientific scale, immediate onset or extended duration of event, resulting in catastrophic damage and uninhabitable conditions.

SECTION FIVE | Risk Assessment and Hazard Summary

TABLE 5.2: HAZARD SCALE INDEX TO DEVELOP HAZARD SUMMARY
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 5.1 DATA.

Hazard	Scale / Index	Weak	Moderate	Severe	Extreme
Drought	Palmer Drought Severity Index ³	-1.99 to +1.99	-2.00 to -2.99	-3.00 to -3.99	-4.00 and below
Earthquake	Modified Mercalli Scale ⁴	I to IV	V to VII	VII	IX to XII
	Richter Magnitude ⁵	2, 3	4, 5	6	7, 8
Hurricane Wind	Saffir-Simpson Hurricane Wind Scale ⁶	1	2	3	4, 5
Tornado	Fujita Tornado Damage Scale ⁷	F0	F1, F2	F3	F4, F5

Probability of Future Events

- **Unlikely:** Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years.
- **Occasional:** 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- **Likely:** 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- **Highly Likely:** 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

Overall Significance

- **Low:** Two or more criteria fall in lower classifications, or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.
- **Medium:** The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.
- **High:** The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

- Cumulative meteorological drought and wet conditions: <http://ncdc.noaa.gov/>
- Earthquake intensity and effect on population and structures: <http://earthquake.usgs.gov>
- Earthquake magnitude as a logarithmic scale, measured by a seismograph: <http://earthquake.usgs.gov>
- Hurricane rating based on sustained wind speed: <http://nhc.noaa.gov>
- Tornado rating based on wind speed and associated damage: <http://spc.noaa.gov>

5.2. Potential Hazard Exposure and Loss Estimates

The District reviewed a set of jurisdictional-level hazard maps and data provided by the County of San Diego, including detailed critical facility information and localized potential hazard exposure/loss estimates related to residential, commercial and critical asset/facilities to identify the top hazards threatening the District service area. Potential hazard exposure/loss estimates and are summarized in Table 5.3.

SECTION FIVE | Risk Assessment and Hazard Summary

TABLE 5.3: SUMMARY OF POTENTIAL HAZARD-RELATED EXPOSURE/LOSS IN VISTA DISTRICT SERVICE AREA *
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 5.1 DATA.

Hazard Types		Number of Buildings	Potential Exposure Loss (x \$1,000)	Number of Buildings	Potential Exposure Loss (x \$1,000)	Number of Facilities	Potential Exposure Loss (x \$1,000)
	Exposed Population	Residential		Commercial		Critical Facilities/Infrastructure**	
Dam Failure	33	N/A	N/A	N/A	N/A	N/A	N/A
Earthquake (Annualized Loss - Includes shaking, liquefaction and landslide components)	212	1,319	757,788	680	291,949	1	5,000
100 Year	N/A	N/A	N/A	N/A	N/A	N/A	N/A
500 Year	33,787	1,262	490,413	61	18,443	5	97,273
Rose Canyon Fault	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Floods (Loss)							
100 Year	481	35	13,601	7	2,116	4	22,575
500 Year	818	48	18,653	14	4,233	7	49,238
Rain-Induced Landslide							
Moderate Risk	4,182	5,802	2,254,077	454	137,267	10	394,676
High Risk	1,733	68	26,418	2	604,700	1	2,020
Drought	133,000						
Wildfire/ Structure Fire							
High Fire Hazard	8,960	674	261,916	36	10,885	1	14,101
Very High Fire Hazard	20,066	1,497	581,734	54	16,327	2	79,782

* Data provided by the County of San Diego. The data provided is only applicable to the population, residential and commercial structures, critical facilities and infrastructure that fall within the Vista Irrigation District service area and are not indicative of potential exposure or loss associated with District facilities or within the responsibility of the District. Information is provided as a summary of potential cost impacts to the District service area.

** Critical facilities and infrastructure within the District service area include highways, light rail, bridges, rail stations, oil and gas facilities and schools.

6. SECTION SIX: Mitigation Strategy

The mitigation strategy serves as the long-term blueprint for reducing potential losses identified in the risk assessment. The mitigation strategy describes how the District will accomplish the overall purpose, or mission, of the planning process.

The mitigation strategy is made up of three main required components: mitigation goals, mitigation actions, and an action plan for implementation. These provide the framework to identify, prioritize, and implement actions to reduce risk to hazards.

Mitigation Goals are general guidelines that explain what the District wants to achieve with the plan. Goals are broad policy-type statements that are long-term, and they represent visions for reducing or avoiding losses from the identified hazards.

Mitigation Actions are specific projects and activities that help achieve the goals.

Action Plans describe how the mitigation actions will be implemented, including how those actions will be prioritized, administered, and incorporated into the District's existing planning mechanisms.

6.1. Mitigation Goals

The District has developed the following six mitigation goals for this Hazard Mitigation Plan:

- Goal 1. Replace District's main conduit for local water to maintain access to local water supply and reduce dependence on imported water.
- Goal 2. Increase system reliability and redundancy through upgrades to aging infrastructure/facilities that have reached the end of their useful life.
- Goal 3. Reduce the possibility of damage and losses to existing assets, including people, critical facilities/infrastructure, and public facilities due to natural hazards (including earthquakes, wildfire and extreme weather).
- Goal 4. Reduce the possibility of damage and losses due to power outages.
- Goal 5. Reduce the possibility of damage and losses due to cyber-security breaches.
- Goal 6. Improve hazard mitigation coordination and communication with federal, state, local and tribal governments.

6.2. Mitigation Actions

A mitigation action is a specific action, project, activity, or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process. This Annex details the District's planned mitigation action implementations and are shown in Tables 6.1.1 through 6.1.6.

SECTION SIX | Mitigation Strategy

TABLE 6.1.1: VISTA IRRIGATION DISTRICT GOAL 1
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.

Goal 1: Replace District's main conduit for local water to maintain access to local water supply and reduce dependence on imported water.

Objective 1.A: Determine the most reliable, affordable, and responsible alignment to replace the existing 11-mile, nearly 100 year old Flume. Mitigation Hazard – Earthquake/Drought.

Action 1.A.1	Complete Vista Flume Replacement Alignment Study to select a preferred alignment based on various screening criteria including health and regulatory permits, maintaining minimum pressures, engineering and constructability, environmental/geotechnical constraints, overall capital costs, implementation schedule, impacts to local water deliveries, cash flow, and impacts to rates (study underway).
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Objective 1.B: Financial planning and securing funding for Flume Replacement Project.

Action 1.B.1	Research and identify all available local, state, and federal funding sources and opportunities.
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Objective 1.C: Design and construct the Flume Replacement Project.

Action 1.C.1	Complete design and associated environmental and permitting.
Action 1.C.2	Secure necessary funding.
Action 1.C.3	Construct the Flume Replacement Project.

TABLE 6.1.2: VISTA IRRIGATION DISTRICT GOAL 1
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.

Goal 2: Increase system reliability and redundancy through upgrades to aging infrastructure/facilities that have reached the end of their useful life.

Objective 2.A: Retire the nearly 100-year old, seismically deficient Cabrillo Circle (E-1) Reservoir. Mitigation Hazard: Earthquake.

Action 2.A.1	Construct redundant feed from the 752 Pressure Zone to the 565 Pressure Zone, which includes approximately 2,000 feet of new 18-inch pipeline and a flow control/pressure regulating valve.
Action 2.A.2	Demolish the existing E-1 Reservoir.

Objective 2.B: Retire the nearly 100-year old, seismically deficient Summit Terrace (C) Reservoir.

Action 2.B.1	Construct redundant feed from the 707 Pressure Zone to the 637 Pressure Zone, which includes upsizing approximately 4,500 feet of 4 to 6 inch piping to 10 inch piping and a new flow control/pressure regulating valve.
Action 2.B.2	Construct redundant feed from the 707 Pressure Zone to the 637 Pressure Zone, which includes upsizing approximately 4,500 feet of 4 to 6 inch piping to 10 inch piping and a new flow control/pressure regulating valve.
Action 2.B.3	Demolish the existing, seismically deficient C Reservoir.

Goal 2 (Cont.): Increase system reliability and redundancy through upgrades to aging infrastructure/facilities that have reached the end of their useful life.

Objective 2.C: Replace the nearly 100-year old, seismically deficient Virginia Place (A) Reservoir. Mitigation Hazard: Earthquake.

Action 2.C.1	Demolish and replace the existing A Reservoir, increase storage capacity as much as the existing site will allow.
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Objective 2.D: Construct new Pechstein II Reservoir to meet system storage requirements and afford operational flexibility to seismically retrofit the existing Pechstein I Reservoir.

Action 2.D.1	Design, construct, and place into service the new Pechstein II Reservoir.
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Action 2.D.2	Design and construct seismic retrofits for existing Pechstein I Reservoir.
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**TABLE 6.1.3: VISTA IRRIGATION DISTRICT GOAL 1
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.**

Goal 3: Reduce the possibility of damage and losses to existing assets, including people, critical facilities/infrastructure, due to natural and manmade hazards (includes geological, flooding, wildfire and extreme weather).

Objective 3.A: Protect existing assets with the highest relative vulnerability to the effects of geological (earthquakes, mudslides and landslides) hazards. Mitigation Hazard: Earthquake/Wildfire/Man-Made – Cyberattacks.

Action 3.A.1	Replace/update seismic sensors/valves at critical reservoirs and flow control facilities.
Action 3.A.2	Continue monthly Flume inspections to identify any areas of potential slope instability.
Action 3.A.3	Continue to maintain adequate pipeline materials in the District’s warehouse.
Action 3.A.4	Update earthquake response actions in Emergency Response Plan (ERP).

Objective 3.B: Protect existing assets with the highest relative vulnerability to the effects of flooding.

Action 3.B.1	Continue inspection and maintenance of District owned storm drains and culverts.
Action 3.B.2	Consider relocating or replacing water mains in flood prone areas.
Action 3.B.3	Develop inspection program for water mains that traverse creeks, channels or bridges.

Objective 3.C: Protect existing assets with the highest relative vulnerability to the effects of wildfire.

Action 3.C.1	Continue weed abatement/brush clearing of District property.
Action 3.C.2	Partner with local agencies and promote defensible space efforts.
Action 3.C.3	Update wildfire response actions in ERP.

Goal 3 (Cont.): Reduce the possibility of damage and losses to existing assets, including people, critical facilities/infrastructure, due to natural and manmade hazards (includes geological, flooding, wildfire and extreme weather).

Objective 3.D: Protect existing assets with the highest relative vulnerability to the effects of manmade hazards.

Action 3.D.1	Continue to enhance site security at remote facilities based on vulnerability assessments.
Action 3.D.2	Update cyber-security response actions in ERP.

**TABLE 6.1.4: VISTA IRRIGATION DISTRICT GOAL 4
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.**

Goal 4: Increase operational resiliency to power outages – unplanned, public safety power shutoffs and rolling outages.

Objective 4.A: Add ancillary power sources to key facilities and SCADA sites. Mitigation Hazard: Power Loss.

Action 4.A.1	Add hookups for portable generators at Deodar Reservoir/Pump Station # 4 and E43 Regulator.
Action 4.A.2	Add solar/battery backup system to Pump Station # 3.
Action 4.A.3	Add solar/battery backup system to Elevado (H) Reservoir.

Objective 4.B: Partner with other agencies at shared facilities to develop ancillary power sources that are mutually beneficial.

Action 4.B.1	Coordinate with the San Diego County Water Authority to provide backup power source to VID3/Plant # 3.
Action 4.B.2	Coordinate with the city of Vista to provide backup power source to E30S flow control facility and Fire Station # 3.

Objective 4.C: Increase operational resiliency at District Headquarters.

Action 4.C.1	Explore the expansion of the backup generation system to provide power to the entire facility.
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SECTION SIX | Mitigation Strategy

TABLE 6.1.5: VISTA IRRIGATION DISTRICT GOAL 5
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.

Goal 5: Reduce the possibility of damage and losses due to cyber-security breaches	
<i>Objective 5.A: Implement Multifactor authentication (MFA) on all externally accessible systems.</i> <i>Mitigation Hazard: Man-made – Cyberattacks</i>	
Action 5.A.1	Review all externally available systems and investigate how best to implement MFA. Evaluate various solutions.
Action 5.A.2	Implement MFA and provide training to users.
<i>Objective 5.B: Improve the District's capability and efficiency at administering pre- and post- disaster mitigation.</i>	
Action 5.B.1	Implement as many pre-incident safeguards as possible. Deploy a robust SIEM solution to get alerts to incidents that traditional AV products may not detect.
Action 5.B.2	Continuously develop and improve the District's cyber-incident and business continuity plans to create minimal downtime in the event of an incident. Test these plans at least annually.

TABLE 6.1.6: VISTA IRRIGATION DISTRICT GOAL 6
FEMA LOCAL MITIGATION PLANNING HANDBOOK WORKSHEET 6.1 DATA.

Goal 6: Improve hazard mitigation coordination and communication with federal, State, local and tribal governments.	
<i>Objective 6.A: Establish and maintain closer working relationships with state agencies, local, and tribal governments. Mitigation Hazard: Earthquake/Wildfire/Power loss/Drought/Man-made – Cyberattacks.</i>	
Action 6.A.1	Plan, practice, exercise, and operate the District's Emergency Operations Center (EOC) following the National Incident Management System (NIMS), the Standardized Emergency Management System (SEMS), and Incident Command System (ICS).
Action 6.A.2	Encourage further refinement and updating of the District's Emergency Response Plan to coordinate with local agencies and the Countywide Emergency Operations Plan.
<i>Objective 6.B: Improve the District's capability and efficiency at administering pre- and post- disaster mitigation.</i>	
Action 6.B.1	Participate in the development and execution of annual Emergency Operations Center (EOC) tabletop discussions and functional disaster exercises.
Action 6.B.2	Ensure there is always adequate staffing in the EOC and EOC personnel are trained in multiple positions.

6.3. Mitigation Action Plans

Once the comprehensive list of jurisdictional goals, objectives, and action items listed above was developed, the proposed mitigation actions were prioritized. This step resulted in a list of acceptable and realistic actions that address the hazards identified in the District service area. This prioritized list of action items was formed by the planning team weighing STAPLEE criteria.

The Disaster Mitigation Action of 2000 (at 44 CFR Parts 201 and 206) requires the development of an action plan that not only includes prioritized actions but one that includes information on how the prioritized actions will be implemented. Implementation consists of identifying who is responsible for which action, what kind of funding mechanisms and other resources are available or will be pursued, and when the action will be completed. For more information on potential funding sources and grants for mitigation actions, please see the County of San Diego Multi-jurisdictional Hazard Mitigation Base Plan, Section 6.2.

The top six prioritized mitigation actions as well as an implementation strategy for each are:

Action Item #1: Complete Vista Flume Replacement Alignment Study.

Coordinating Individual/Organization:	Randy Whitmann/Vista Irrigation District
Potential Funding Source:	Vista Irrigation District CIP Fund/financing and potential federal/state grant funding
Implementation Timeline:	4 years (2023-2027)
Hazards Addressed	Earthquake/Drought

Action Item #2: New 565 zone feed to retire Cabrillo Circle (E1) Reservoir.

Coordinating Individual/Organization:	Randy Whitmann/Vista Irrigation District
Potential Funding Source:	Vista Irrigation District CIP Fund/financing and potential federal/state grant funding
Implementation Timeline:	1 year (2023-2024)
Hazard Addressed	Earthquake

Action Item #3: New 637 zone feed to retire Summit Terrace (C) Reservoir.

Coordinating Individual/Organization:	Randy Whitmann/Vista Irrigation District
Potential Funding Source:	Vista Irrigation District CIP Fund/financing and potential federal/state grant funding
Implementation Timeline:	1 year (2023-2024)

SECTION SIX | Mitigation Strategy

Hazard Addressed

Earthquake

Action Item #4: Virginia Place (A) Reservoir Replacement.

Coordinating Individual/Organization:

Randy Whitmann/Vista Irrigation District

Potential Funding Source:

Vista Irrigation District CIP Fund/financing and potential federal/state grant funding

Implementation Timeline:

3 years (2023-2026)

Hazard Addressed

Earthquake

Action Item #5: Construct Pechstein II Reservoir.

Coordinating Individual/Organization:

Randy Whitmann/Vista Irrigation District

Potential Funding Source:

Vista Irrigation District CIP Fund/financing and potential federal/state grant funding

Implementation Timeline:

3 years (2023-2026)

Hazards Addressed

Earthquake/Drought

Action Item #6: Deodar Reservoir Roof Replacement.

Coordinating Individual/Organization:

Randy Whitmann/Vista Irrigation District

Potential Funding Source:

Vista Irrigation District CIP Fund/financing and potential federal/state grant funding

Implementation Timeline:

2 years (2023-2025)

Hazard Addressed

Earthquake

Action Item #7: Reduce the possibility of damage and losses due to cyber-security breaches.

Coordinating Individual/Organization:

Rick Pooley/Vista Irrigation District

Potential Funding Source:

Vista Irrigation District General Fund

Implementation Timeline:

1 year (2023-2024)

Hazard Addressed

Man-made – Cyberattacks

7. SECTION SEVEN: Implementation Progress

Hazard Mitigation Plan maintenance is the process the planning team has established to track the plan's implementation progress and to inform the plan update. The planning team, comprised of Division Heads, will meet annually with a coordination team (the District's Management Analyst and Safety and Risk Administrator) that will take the lead by facilitating the maintenance of the plan. These actions will help to:

- Ensure that the mitigation strategy is implemented according to the plan.
- Provide the foundation for an ongoing mitigation program.
- Standardize long-term monitoring of hazard-related activities.
- Integrate mitigation principles into daily job responsibilities and department roles.
- Maintain momentum through continued engagement and accountability in the plan's progress.

Hazard Mitigation Plan updates provide the opportunity to consider how well the procedures established in the previously approved plan worked and revise them as needed. This Annex is part of the most recent San Diego County Multi-Jurisdictional Hazard Mitigation Plan update. The plan was previously updated in 2018. See the San Diego County Multi-Jurisdictional Hazard Mitigation Plan for more information.

7.1. Mitigation Action Progress

The District's coordination team will track the implementation of the plan annually and update on implementation progress in a five-year cycle.

7.2. Plan Update Evaluation

The District coordination team will use the FEMA Region IX Hazard Mitigation Plan Review Tool to conduct a plan update evaluation in a five-year cycle running concurrently with the San Diego County Multi-Jurisdictional Hazard Mitigation Plan update.

7.2.1. Integration through Existing Programs and Planning Mechanisms

The mitigation action items identified provide the District with a framework for activities that it plans to implement over the next five years. As the District has other short and long-term planning documents, integrating action items from the hazard mitigation plan into other planning documents will streamline processes and overall align District goals and objectives. Relevant mitigation action items will be incorporated into the following programs and planning documents:

- Urban Water Management Plan
- Capital Improvement Plan
- Potable Water Master Plan
- Mainline Replacement Program
- Emergency Response Plan
- Water Supply Response Program

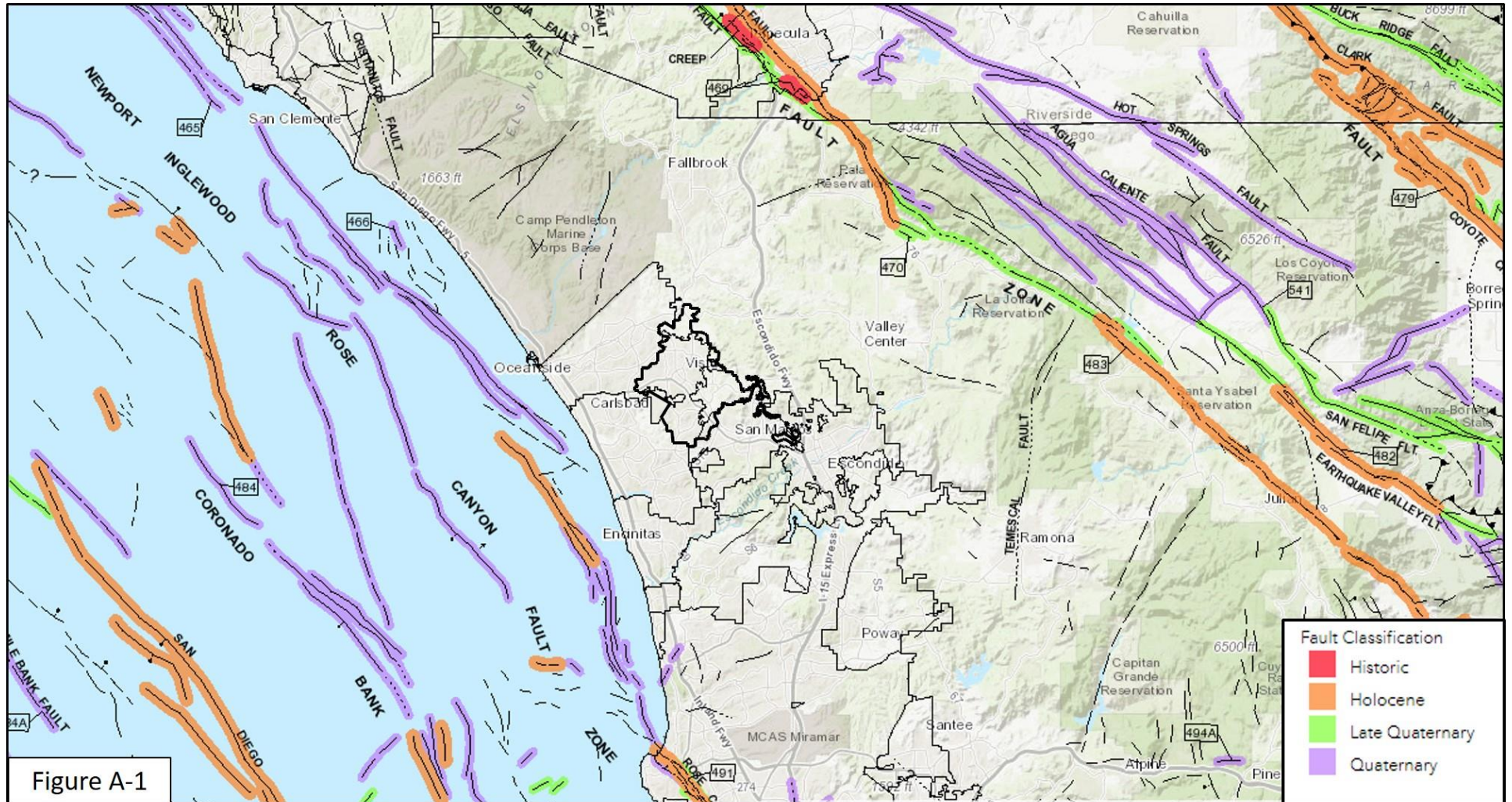
SECTION SEVEN | Implementation Progress

- Water Rate Study
- Risk and Resilience Assessment

The planning and coordination teams will be responsible for incorporating this hazard mitigation plan into other planning mechanisms at their scheduled update. As most mitigation objectives and goals are infrastructure-related, implementation of these projects can quickly align with the District's Capital Improvement Plan and Mainline Replacement Program. These plans are typically updated on an annual basis; whereas, other plans are updated less frequently.

Efforts should continuously be made to monitor the progress of mitigation actions implemented through the aforementioned planning mechanisms and, where appropriate, their priority actions should be incorporated into updates of this hazard mitigation plan.

8. SECTION EIGHT: List of Figures



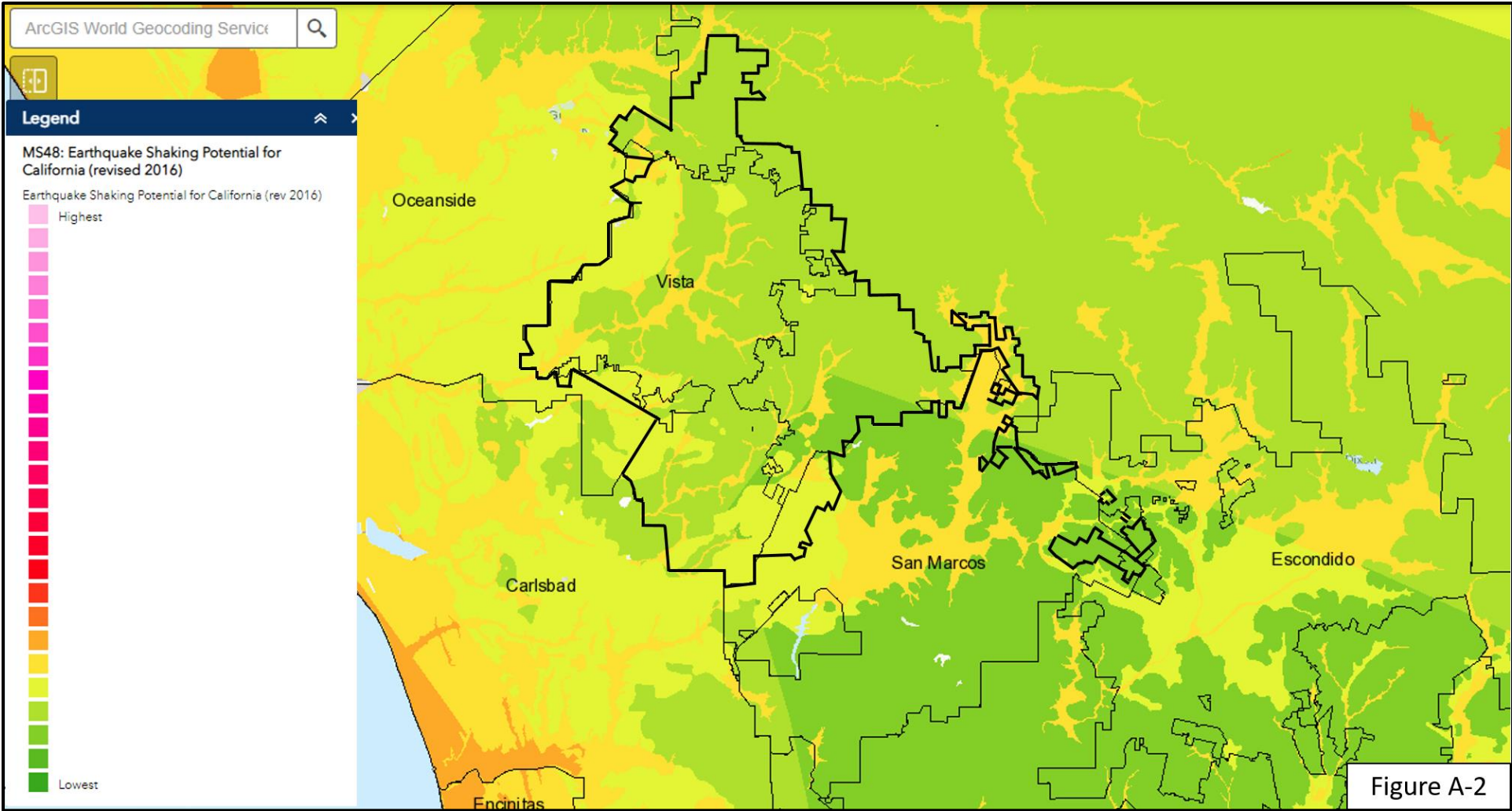
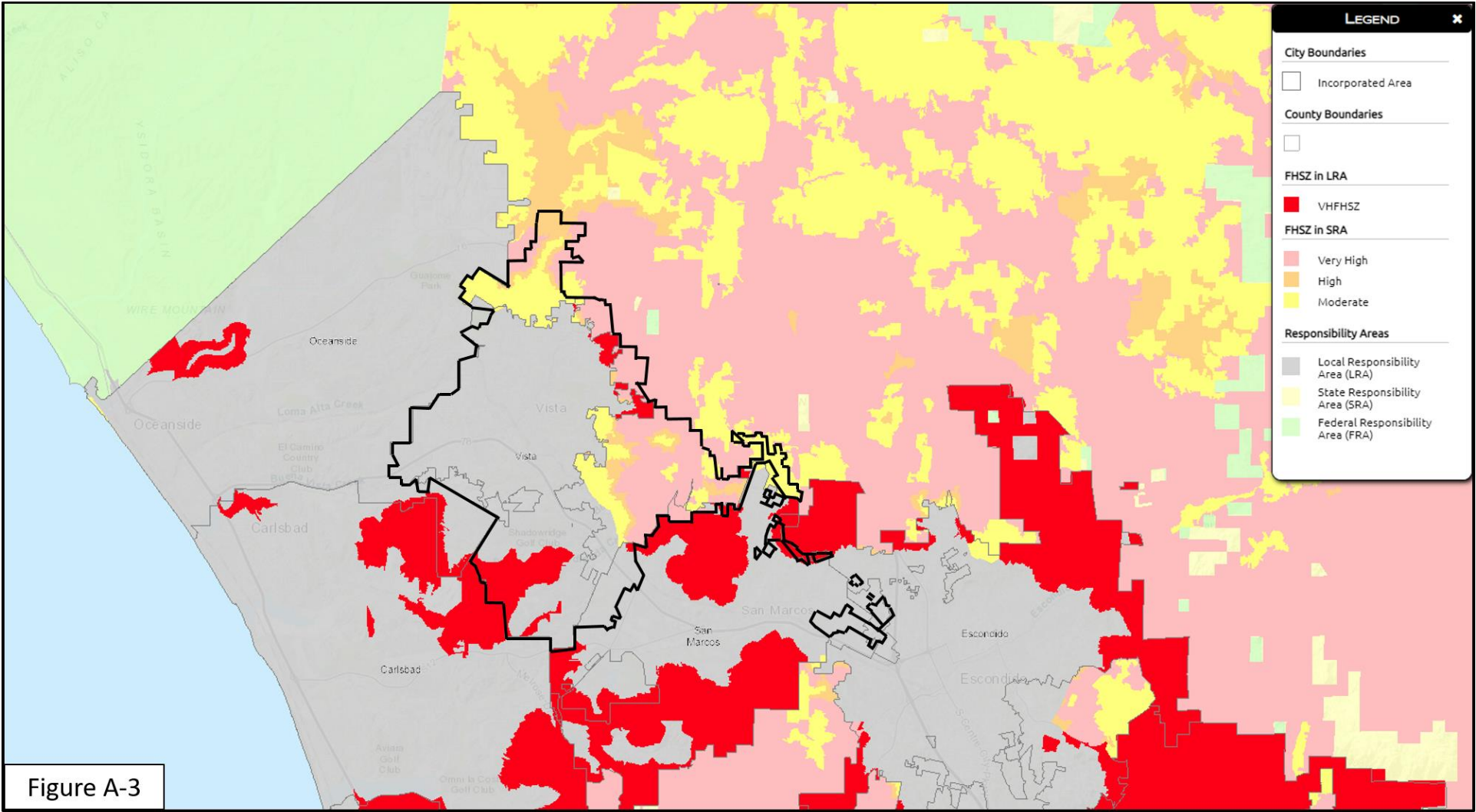


Figure A-2



SECTION EIGHT | List of Figures

